

Conceptual and physical disparity inherent in the modeling of multiscale fatigue crack growth: nano-micro-macro G. C. Sih	1
High-temperature fracture behavior of ceramic matrix composites: an overview L. Guerra Rosa	17
Creep of plate-fin structures in compact heat exchangers Shan-Tung Tu, Guo-Yan Zhou	29
A new method to fatigue initiation and crack growth prediction Zengliang Gao, Baoxiang Qiu, Xiaogui Wang	37
Study on stress intensity factor of a finite width laminate Jianjun Chen, Kee-Bong Yoon	47
An important sampling simulation for the failure probability of creep damage Changhong Liu, Fu-Zhen Xuan	51
Residual fracture energy of cement past, mortar and concrete subject to high temperature A. Menou, G. Mounajed, H. Boussa, A. Pineaud, H. Carre	55
Comparative assessment of fracture toughness data using diverse statistical distributions Han-Ok Ko, Yoon-Suk Chang, Young-Jin Kim, Min-Chul Kim, Bong-Sang Lee	63
Modeling of thin film growth during metal dusting Cheng Chen, Changyu Zhou, Guiming Hu, Na Lei	69
The local plastic collapse of ligament for circumferentially part-through wall cracked pipes Zhaoji Hu, Teng Deng, Peining Li	75
The diffusion-induced stresses during metal dusting Guiming Hu, Changyu Zhou, Cheng Chen, Na Lei	79
Optimum design of an active micro-mixer using the Kriging metamodel J. Y. Park, J. S. Yu, M. K. Im, Y. K. Oh, J. Y. Park, Y. D. Kim, J. S. Maeng, S. Y. Han	85
A modified fracture criterion of maximum circumferential normal stress for an interface crack Yumei Bao, Guozhong Chai, Xiaoyong Pan	91
Nonlinear analysis of prestressed concrete cable-stayed bridges with long span under construction state Yun Liu, Chenglong Wei, Donghuang Yan, Xiaoyan Liu	95

Oblique section bearing capacity of reinforced concrete box beams strengthened with CFS Xiaoyan Liu, Weiqing Zhu, Chenglong Wei, Fei Wu	99
Damage assessment for beam structure using perturbation method Changzhao Qian, Deliang Chen	105
Modeling of multilayered thin film processed with laser forming Jianhua Wu, Ying Jin, Zhenqiang Yao	111
Numerical simulation of tensile performance of polymers Qin-Zhi Fang, Hyeon-Gyu Beom, Song Lin, Hui-Min Li	117
A parametric numerical analysis of stress intensity factors on multiple interacting surface cracks in T-butt joints using FRANCE3D Sung-Won Kang, Myung-Hyun Kim, Wen-De Song, Kyu-Seon Jeong	123
Numerical simulation of mode I crack tip field on GTN void constitutive model Xueyi Zhang, Guangping Zou, Yunzeng He	129
Numerical analysis of dynamic characteristics of the graphite heat exchange tube with half-ellipse cracks Qiwu Dong, Yanan Li, Ke Wang, Yongqing Wang	133
Numerical simulation for the centrifuge and its reliability Shaoping Zhou, Xiaoling Ge, Peining Li	139
The numerical simulation of multi-step sheet metal forming of aerosol can's cap Jie Jin, Haiyan Qu, Meina Fan	143
The use of ABAQUS to simulate temperature and residual stress fields in unclosed hoop weldments Kunrong Jia, Zhufeng Yue	147
Finite element analysis of dynamic stress of the outdoor unit of air conditioner Rong Yang, Shiyun Li, Shaoping Zhou, Jun Guo, Lanzhu Zhang, Hu Hui	153
Finite element numerical simulation of stamping forming of crossbeam for automobile Xiaochun Ma, Yuping Ni, Weibing Shen	159
Post-buckling analysis of composite thick-skin multi-spar wing box under bend and twist load Huafeng Liu, Zhufeng Yue	163
Stress analysis and structural optimization for the opening flat cover of pressure vessels Wenhua Guan, Deming Fang, Kangda zhang, Ying Li	169
Fracture analysis of twisted rubber-steel sphere bush with an elliptical surface crack Xiaoying Liu, Xiaoxiang Yang	173
A nonlinear high-order FEM for analysis of RC wall structures with material model of smeared rotating cracks Songbai Cai, Pusheng Shen	179

Experimental study and numerical simulation on high temperature & low cycle short fatigue cracks Lu Wang, Zheng Wang, Dongbai Ai	185
A CDM model for remaining fatigue-lifetime prediction of ductile metals Duyi Ye, Jinyang Zheng	191
Fatigue strength assessment for steel casting weld joints Kyu-Seon Jeong, Myung-Hyun Kim, Sung-Won Kang, Wen-De Song	197
Torsional fatigue behaviors of 16MnR welded joint Chao Li, Xuemei Luo, Gang Chen, Xu Chen, Weihua Zhang	203
The effect of multiple repairing weld and TIG-dressing on T-shape joints weld bead fatigue strength Dongxia Li, Baochun Jia	209
The study of fatigue behavior of countersunk fastener holes Jun Liu, Wenxuan Gou, Honglu Xu, Zhufeng Yue	213
LCF behavior and lifing of a directionally solidified nickel base superalloy at high temperature H. C. Yu, Y. Li, X. R. Wu, X. G. Yang, D. Q. Shi	217
Effect of NiCrAlYSi coating on HCF behavior of a directionally solidified nickel base superalloy Bin Zhong, Huichen Yu, Ying Li, Xueren Wu	223
Experimental study on fatigue behavior of honeycomb sandwich panel using three point bending tests Xu Luan, Jun Liang, Jin Cheng, Chao Wang	229
Study on immune algorithm for the fatigue crack growth rate of 30Cr1Mo1V steel Jian Chen, Zhao Wang, Jianjun He, Yanjie Ren, Maojun Li, Shide Li	233
An experimental study of fatigue crack growth with step loading condition Wenfeng Tu, Xiaogui Wang, Zengliang Gao, Changzhe Shao	239
Low cycle fatigue behaviors of low-velocity-impacted (LVI) aluminum-alloy plate Wei Liu, Bin Zhang, Zhufeng Yue	245
Effect of weld defect on fatigue life for electron-beam welded titanium alloy Jianzhong Liu, Bo Chen, Lifa Wang, Benrun Hu, Xueren Wu	251
The influence of stress relaxation on high temperature creep life of steam turbine rotor steel Shide Li, Jian Chen, Yanjie Ren, Jianjun He, Xuxiang Lu, Zhao Wang	257
The creep behavior analysis of PMMA with different stress and under different temperature Zongzhan Gao, W. X. Gou, Zhufeng Yue	261
Creep-rupture property analysis and reliability prediction of creep-rupture life for low alloy heat-resistant CrMo steel Yuanyuan Fang, Dongming Li, Jie Zhao	265

Investigation on creep crack growth rate in heat affected zone of welded joint for 9% Cr ferritic heat resistant steel Lianyong Xu, Hongyang Jing, Junchao An, Delu Xu	271
Life prediction for high temperature bolting of ultra-supercritical units Jinquan Guo, Fu-Zhen Xuan, Zhengdong Wang, Shan-Tung Tu	275
Selection of TTP parameter in creep-rupture life prediction Jie Zhao, Dongming Li, Yuanyuan Fang	281
Experimental study on uniaxial time-dependent ratchetting- fatigue interaction of T6-6061AL alloy Guozheng Kang, Yujie Liu, Jun Ding	287
Tensile and low cycle fatigue behavior of primary pipe material for PWR nuclear power plant Fei Xue, Guogang Shu, Weiwei Yu, Wenxin Ti, Lei Lin, Chongzhe Shi	293
High temperature fatigue creep life prediction of 316L stainless steel under 2-step load Jie Dong, Xuedong Chen, Zhichao Fan, Huifeng Jiang, Heng Jiang, Shouxiang Lu	299
Stress controlled fatigue-creep behavior of 316L stainless steel under different temperatures Huifeng Jiang, Xuedong Chen, Zhichao Fan, Jie Dong, Heng Jiang, Shouxiang Lu	303
Limit load analysis of localized wall-thinning for steam generator tubes Hu Hui, Peining Li	307
Safety analysis of pressure piping containing incomplete penetration under combined loads Shuxin Han, Fei Wang, Shuiping Sheng, Zhijiang Jin	313
Safety assessment of large-scale tanks Tao Liu, Shiming Shen	319
The safety evaluation and life prediction for local wall thinning elbows of high temperature steam pipeline Xiaohua He, Changyu Zhou	323
Reliability evaluation of structural systems subjected to seismic loading Zhangjun Liu, Yaolong Lei	327
Reliability analysis of ice-covered wire subjected to wind load Mianbin Zheng, Guohua Chen, Qipeng Li	333
Development of finite element program for analysis of seismic respond of large scale storage tanks Liying Shen, Shiming Shen	339
Failure analysis of heat exchanger tubes used in a lithium bromide central air-conditioning unit Zhiming Lu, Zhefeng Dai, Longjuan Zhang	343
Failure analysis of risk load on transmission tower Minshan Liu, Mingying Sun, Qiwu Dong, Tong Liu, Lina Zhang	347
Fracture failure analysis of electric tool gear Jianping Wang, Huiping Xie	351

Failure load of concrete beam reinforced by aramid fiber sheet under four-point bending at sheet rupture mode Qingdun Zeng, Yonglu Zhou	355
Experimental study on failure behavior of concrete plates under different support conditions Hongyuan Fu, Xiangxing Kong	361
Research on corrosion behavior of 16MnR steel and its welded joints in high-temperature naphthenic acid solution Jiapei Cao, Guowei Cao, Zhou Fang, Yuanyuan Duan, Zhiping Chen, Xuedong Chen	365
Grey predication of corrosion on oil atmospheric distillation equipment Zhengfang Wang, Yong Wang, Hui Qi, Jian Zhang, Dawei Qu, Xiuhua Liu	371
Stress corrosion cracking test of 16MnR steel in wet hydrogen sulfide and carbonate solutions Yuexiang Dong, Bo Wang, Wei Zhang, Zengliang Gao, Tiecheng Yang	377
Experimental investigation on the adhesively bonded repair of composite structures Qiyong Cheng, Xiaoyan Tong, Liuding Chen, Leijiang Yao, Shengli Lu	381
Experimental research on stress corrosion cracking of X70 pipeline steel in nitrate solutions Bo Wang, Yuexiang Dong, Wei Zhang, Zengliang Gao, Tiecheng Yang	385
Research on anti-corrosion property of high-solid epoxy/polyurethane coating of magnesium alloys Kezai Miao, Baiyang Lou, Bin Xu	389
Microstructure and mechanical properties of Cr9Mo tube after long time service at high temperature Tao Chen, Heng Jiang, Xuedong Chen, Zhichao Fan, Xuelin Cao, Tao Wei	395
Fracture damage micro-mechanism of SnAgCu/Cu solder joint Xiaohua Yang, Xiaoyan Li, Weizhen Dui	401
Experimental research on mechanical Property of SPV490Q steel after fire exposure Yangfei Zhou, Jianping Zhao	407
A new method improving intergranular corrosion resistance of AISI 304 stainless steel: deep cryogenic treatment Qiong-Qi Wang, Wei-Ze Wang, Fu-Zhen Xuan, Shan-Tung Tu	411
Effects of initial void damage induced by warm prestressing (WPS) on cleavage fracture of notched steel specimens Guozhen Wang, Hong Wang, Fu-Zhen Xuan, Shan-Tung Tu, Zhengdong Wang	417
Damage detection for steam generator U-bend tubes from changes in their vibration modal characteristics Tong Liu, Qiwu Dong, Minshan Liu	423
The fractal research of the tensile fracture for the grain filled polymer composite material ABS/TiO ₂ Anzhong Liu	429
The effect of environment on resisting chloride permeability in marine concrete Qingling Wu, Hongfa Yu, Jiachun Wang	433

Impact fracture and residual stress analysis of 2Cr13 steam turbine blades after laser alloying Jianhua Yao, Liang Wang, Fanzhi Kong, Chenghua Lou, Fang Luo	439
The shear strength of the flip-chip solder bump Chunwei Ma, Enxia Zhang, Peiquan Xu, Jianping He	443
Definition of yield load on small punch test by means of double slope of elastic curve Kaishu Guan, Ming Song, Yichang Huang, Lixun Zhao	447
Thickness effect on the ductile fracture properties of the vessel steel with small punch testing techniques Zhaoxi Wang, Xiaoliang Zhang, Huiji Shi, Pan Shi	451
The environment fracture susceptibility of high-strength bainitic low alloy steels containing silicon Xuechong Ren, Wuyang Chu, Yanjing Su, Lijie Qiao	457
Investigation on the cracking behavior of rolling contact fatigue of 1070 steel Lijian Zhuang, Xiaogui Wang, Xuedong Chen, Zengliang Gao	463
Study of dynamic properties of flexible polyurethane foam Lanzhu Zhang, Shaoping Zhou, Hu Hui	469
Thermal cycle behavior of atmospheric plasma sprayed thermal barrier coatings Yamei Wang, Hongyu Qi, Xiaoguang Yang, Duoqi Shi	475
Calculating method of radial stiffness of cylindrical roller bearings Hao Wu, Jianwen Wang, Qi An	481
Influence of the inner planetary gear on the dynamic loads of the reducer Suohuai Zhang, Jiangfeng Zhang, Lei Li	487
Preparation of $\lambda/4$ type light quality EM wave absorber of EPS in S-band Yuefang Zhang, Wanjun Hao, Jianjian Chen, Xiaoliang Zhao	493
Optimal excitation frequency for delamination detection in cross-ply laminated beams using A_0 lamb mode Yaolu Liu, Ning Hu	497
Pushover analysis and application for a continuous rigid frame bridge by considering high order vibrational modes Xingye Chen, Xuesong Tang	501
Thermally induced vibration in a viscoelastic plate under the wave heat shock Hao Hu	507
Effects of road surface roughness on vibration of highway bridge due to the vehicle Chenggang Ma, Yongxing Lai, Minshan Liu, Miaomiao Tian	513
Application of object-oriented bayesian networks for PFFSA of the piping in the ammonia synthesis unit Haixuan Cui, Weiqiang Wang, Mengli Li, Dedong Hu, Huaixiang Cao	517
Fault diagnosis system of virtual compressor based on probabilistic neural network Junfeng Pei, Chunjing Shan	523

The relationship between hydrogen and ultrasonic surface wave attenuation of stainless steel Wenbin Kan, Yebo Lu, Wenjun Shen, Hongliang Pan	527
An on-line health monitoring technique for hydrogen reformer tubes Luyang Geng, Jianming Gong, Ruisong Zhu, Dongxing Xi, Yun Zhou	531
Application of surface technology to structural crack monitoring Rong-Hong Cui, Yu-Ting He, Hong-Peng Li, Wen-Jun Shu	537
Thickness monitoring online by welded ultrasonic waveguide for pressure piping at high temperature Bingjun Gao, Lin Fu, Yachao Zhang, Yanling Di	541
Monitoring of hydrogen embrittlement for hydrogenation processing plants Zhengdong Wang, Zhanya Xing, Kuilong Zhu, Fuzhen Xuan	545
Effect of surface nanocrystallization on fatigue behavior of 35# carbon steel L. B. Liao, D. Li, Z. Fan, H. Xu, L. Zhang	549
A study on improvement of replication method by applying electrolytic polishing technique Gimo Yang, Jae-Kyun Lim, Kwan-Ju Lee, Kee-Bong Yoon	553